

Release Notes

HP StorageWorks IBM AIX Kit for Enterprise Virtual Array

Product Version: 3.0F

Sixth Edition (October 2004)

Part Number: AV-RUHDF-TE

This document contains the most recent product information about the HP StorageWorks IBM AIX Kit V3.0F used for integrating host servers with the StorageWorks Enterprise Virtual Array (VCS version 3.020).

For the latest version of the IBM AIX Release Notes and other documentation, access the HP storage web site at <http://www.hp.com/country/us/eng/prodserv/storage.html>.



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About this document

This section covers the following topics:

- [Release Notes information](#), page 3
- [Intended audience](#), page 4

Release Notes information

These release notes cover the following topics:

- [New features](#), page 5
- [Enterprise Virtual Array storage system](#), page 5
- [Supported operating systems](#), page 7
- [Operating constraints](#), page 9
- [Failover/failback](#), page 9
- [Avoiding problem situations](#), page 10
- [Enterprise Storage System notes](#), page 11
- [Host considerations](#), page 12
- [Storage System Scripting Utility for Enterprise Virtual Array](#), page 12
- [VCS firmware upgrades and IBM AIX](#), page 13

Intended audience

This document is intended to assist customers who purchased the StorageWorks Enterprise Virtual Array and the associated StorageWorks Operating System kits. Other associated software packages are:

- StorageWorks Virtual Controller Software Package V3.020 for Dual HSV Controllers
- StorageWorks Snapshot for Virtual Controller Software V3.020 for Dual HSV Controllers

This document is also intended for use by HP Customer Service personnel responsible for installing and maintaining designated devices associated with this storage system.

Conventions

The following conventions are used throughout this document:

- Unless otherwise specified, all references to VCS V3.020 refer to the software package (kit) and documentation. These software packages and documentation support VCS V3.020.
- *The System Software for Enterprise Virtual Array* is the storage system software that contains Virtual Controller Software (VCS), Environmental Monitoring Unit (EMU) firmware, programmable component images, diagnostics, and message files. This storage system software is usually represented by a four-digit number like V3.020.
- Unless otherwise specified, all references to an HSV110 controller or an HSV110 controller pair should be interpreted as the HSV110 or HSV100 controller or controller pair.
- Unless otherwise specified, all references to the Enterprise Storage System or storage system should be interpreted as the EVA5000 or the EVA3000.
- Unless otherwise specified, all references to rack should be interpreted as the 9000-Series Enterprise Storage System Rack.
- Unless otherwise specified, all licensing references to host ID should be interpreted as the storage system world wide name (WWN).
- Unless otherwise specified, all references to the management appliance should be interpreted as the HP StorageWorks Management Appliance.
- Unless otherwise specified, all references to a single instance of a management agent should be interpreted as the HP StorageWorks Command View EVA.
- The term fabric means Fibre Channel Switched (FC-SW) connectivity.

New features

This section briefly describes new features and changes that are supported by the version 3.0F release of the platform kit.

New features for version 3.0F

The following are major enhancements included in the V3.0F release of the platform kit:

- Support for VCS 3.020
- Support for SSSU V3.2, build 7

Note: The *IBM AIX for Enterprise Virtual Array Installation and Configuration Guide V3.0b* has not changed.

Enterprise Virtual Array storage system

This document contains the most recent product information about the Enterprise Virtual Array. An Enterprise Virtual Array storage system consists of the following:

- One pair of HSV110 controllers.
- An array of physical disk drives that the controller pair controls. The disk drives are located in drive enclosures that house the support systems for the disk drives.
- Associated physical, electrical, and environmental systems.
- Command View EVA, which is the graphical interface to the storage system. Command View EVA software resides on the management appliance and is accessed through a browser.
- Management appliance, switches, and cabling.
- At least one host attached through the fabric.

Enterprise Virtual Array documentation

The Enterprise *Virtual Array Catalog of Associated Documentation* is included on the HP Technical Documentation page. You can display a comprehensive list of Enterprise Virtual Array documentation as well as documentation for products that may be required to operate your storage system. To access the technical documentation, go to

<http://h18006.www1.hp.com/products/storageworks/enterprise/documentation.html>

Support release information

For future product support release information, visit

<http://h18006.www1.hp.com/storage/index.html>

This web site provides downloads for storage products.

Supported configurations

Refer to the *Enterprise Virtual Array Quick Specs* for supported configurations. The *HP StorageWorks SAN Design Reference Guide* is a detailed guide for SAN configurations and is available at

<http://h18004.www1.hp.com/products/storageworks/san/documentation.html>

Supported operating systems

The Enterprise Virtual Array storage system is compatible with the following operating systems:

- Tru64 UNIX
- Windows NT/Windows 2000/Windows Server 2003 (32- and 64-bit)
- OpenVMS
- Sun Solaris
- HP-UX
- IBM AIX
- Linux
- Novell NetWare

Table 1 lists the operating system's specifications.

Note: Table 1 contains current minimum level operating system specifications at the time of the Enterprise Virtual Array V3.020 release. Some component versions may change due to revision. For the latest information, go to <http://h18006.www1.hp.com/storage/index.html>

Table 1: Operating Systems Specifications

Platform	OS version		FCA (HBA)	Adapter firmware	Adapter driver
IBM-AIX	4.3.3	HACMP 4.4.1	PC2000LC-HPSP	3.2.10	1.5.25.3
	5.1	HACMP 4.4.1, 4.5, 5.1			1.5.26.0 (Single Path driver only)
	5.2	HACMP 4.5, 5.1			

1. Refer to Secure Path documentation for the multiple path driver versions.

Switch support

This kit supports the Fibre Channel switches and firmware versions listed in the *HP StorageWorks SAN Design Reference Guide* at <http://h18000.www1.hp.com/products/storageworks/san/documentation.html>

Note: HP recommends that you do not mix switch firmware versions in your SAN. It is considered a best practice to uniformly upgrade all switches in the SAN.

Multiple path support

IBM AIX with EVA storage requires the installation of StorageWorks Secure Path on each IBM AIX host to achieve high availability multiple path capability. Secure Path is licensed on a per-host basis. Refer to the HP StorageWorks Enterprise Virtual Array 5000 specifications page for Secure Path versions at

<http://h18006.www1.hp.com/products/storageworks/enterprise/specifications.html>

Supported IBM servers

Table 2 lists the Enterprise Virtual Array compatible IBM AIX server models.

Table 2: IBM AIX supported servers

Server	Number
RS/6000 (PCI and PCI-X Based Servers only)	43P, 44P, F50, F80, H50, H70, H80, M80, S70, S7A, S80, S85, 170, 270
SP9076 model P-Series	P610, P615, P620, P630*, P640, P650*, P655, P660, P670, P680, P690*

*The SWIA1 and PC2000LC adapter driver does not support extended error handling.

Operating constraints

Any operating constraints specific to the Enterprise Virtual Array hardware and Command View EVA can be found in their respective release notes.

Failover/failback

Failback preference settings for the HSV controllers are specific to the operating system. Refer to the Enterprise Virtual Array hardware release notes for details.

All virtual disks for use by an IBM AIX host should be set to “No Preference” on the **Virtual Disk Properties** page in Command View EVA.

Avoiding problem situations

The following sections describe problems that may arise during platform kit operation and their solutions.

Command View EVA

The Command View EVA release notes contain information on problems pertaining to Command View EVA.

Enterprise Virtual Array version 3.020 hardware

The hardware release notes in your VCS kit contain information on problems pertaining to Enterprise Virtual Array hardware.

Secure Path version

The Enterprise Virtual Array with VCS V3.020 requires the latest version of Secure Path for your operating system. Refer to the HP StorageWorks Enterprise Virtual Array 5000 specifications page to ensure that you have the current version of Secure Path for your operating system. The HP StorageWorks Enterprise Virtual Array 5000 specifications page can be accessed at

<http://h18006.www1.hp.com/products/storageworks/enterprise/specifications.html>

Code load usage

When a maximum configured system is running at maximum load, code load functionality is not effective due to Secure Path timing constraints. The system may time-out before code load is complete. Because of this behavior, VCS upgrades should be done during off peak usage.

Enterprise Storage System notes

Cable requirements

When an Enterprise Virtual Array is connected to a 1Gb switch, an SC-to-LC cable is required for host connectivity. [Table 3](#) and [Table 4](#) list the available cables.

Table 3: LC-SC cables

Length	Description	HP part number
2.0 m ± 40 mm	CA ASSY, LC-SC, Optical 2M	187891-002
5.0 m ± 80 mm	CA ASSY, LC-SC, Optical 5M	187891-005
15.0 m ± 150 mm	CA ASSY, LC-SC, Optical 15M	187891-015
30.0 m ± 300 mm	CA-ASSY, LC-SC, Optical 30M	187891-030
50.0 m ± 500 mm	CA-ASSY, LC-SC, Optical 50M	187891-050

Table 4: LC-LC cables

Length	Description	HP part number
2.0 m ± 40 mm	2-meter LC-LC Multi-Mode Fibre Cable	221692-B21
5.0 m ± 80 mm	5-meter LC-LC Multi-Mode Fibre Cable	221692-B22
15.0 m ± 150 mm	15-meter LC-LC Multi-Mode Fibre Cable	221692-B23
30.0 m ± 300 mm	30-meter LC-LC Multi-Mode Fibre Cable	221692-B26
50.0 m ± 500 mm	50-meter LC-LC Multi-Mode Fibre Cable	221692-B27

Host considerations

This section contains information and important reminders about the host servers.

PCI hot swapping of FCAs not supported

Hot swapping is defined as replacing one FCA with an identical FCA in the same PCI slot while the system is running. This function is not supported on pSeries systems that support hot swapping, because it hangs the server. To replace an FCA, you must first shut down the server.

PCI Hot Addition of FCAs not supported

You cannot add a PCI FCA to an empty PCI slot while the system is running. This function is not supported on the pSeries systems because the hot addition of the FCA fails. The server must be shut down in order to add an FCA.

FCA driver does not support Extended Error Handling (EEH)

EEH is a mechanism built into the pSeries servers that allows the server to isolate a faulty FCA and shut it down. The IBM solution does not support IBM EEH. The availability of servers that support EEH with IBM is equal to other IBM server models.

devices.scsi.disk.rte fileset

Do not use version 5.1.0.51 or 5.1.0.52 of the devices.scsi.disk.rte fileset as this will cause a loss of connectivity for all child devices of SWIA1-PD or PC2000LC FC HBAs.

Storage System Scripting Utility for Enterprise Virtual Array

Refer to the *Command View EVA Release Notes* prior to using the Storage System Scripting Utility (SSSU), as SSSU communicates directly with the Command View EVA.

VCS firmware upgrades and IBM AIX

When upgrading the EVA VCS firmware, both controllers will become inoperative. Under normal operating conditions, this is a condition that Secure Path for AIX cannot handle. However, there is a utility provided in this kit that will pause all i/o on your host that is going through all *SWIA1-PD* or *PC2000LC* Fibre Channel HBAs without any data corruption. This utility is located in the `/usr/hp_hsv110` directory or the `/usr/hp_hsv100` directory and is named `pause_io`.

To upgrade the VCS firmware with an AIX host attached to it, you should perform the following steps:

1. Change the directory to `/usr/hp_hsv110` or `/usr/hp_hsv100`.
2. Execute the `./pause_io` command. If you want to stop i/o, enter `y` when prompted.
3. Update the VCS firmware as directed in the VCS documentation. You will probably have to wait about 10 minutes before you can `unpause i/o`.
4. Press Enter to restart all i/o after the EVA controllers are back online according to the Command View EVA display on the Storage Management Appliance.

